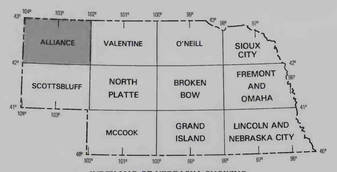

INDEX MAP OF NEBRASKA SHOWING AREA OF PLATE (SHADED)

HYDROLOGIC SOIL GROUPS IN THE ALLIANCE QUADRANGLE, NEBRASKA

Map based on "General Soil Map of Alliance area, Nebraska," U.S. Department of Agriculture Soil Conservation Service and Conservation and Survey Division, University of Nebraska-Lincoln, (1978–82). Hydrologic characteristics derived from soil-properties data (U.S. Department of Agriculture Soil Conservation Service, 1978).

DESCRIPTIONS OF THE SOIL GROUPS

111 Silty clays to silty clay loams with (a) permeabilities less than 1.0 inch per hour, (b) nearly level to very gentle slopes (maximum slopes 1 to 3 percent), and (c) depths to seasonal high water table less than 6 feet. These soils are predominantly on larger flood plains and are represented by the Albaton-Haynie and Luton-Forney associations.

122 Clays to silty clays with (a) permeabilities less than 1.0 inch per hour, (b) nearly level to strong slopes (maximum slopes 3 to 10 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are principally formed on glacial till in the southeastern areas of the State and are characterized by very slow permeabilities. The Crete-Mayberry and Pawnee-Wymore-Burchard are representative associations.

142 Silty clays to silty clay loams with (a) permeabilities less than 1.0 inch per hour, (b) very gentle to steep slopes (maximum slopes 20 to 30 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are most commonly formed in weathered shale and usually exhibit shallow soil development. They occur predominantly in the uplands of extreme northern and southeastern Nebraska and are represented by the Bufton-Orella-Norrest and Kipson-Benfield associations.

152 Clays to silty clay loams with (a) permeabilities less than 1.0 inch per hour, (b) gentle to very steep slopes (maximum slopes that exceed 30 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are generally formed in weathered shale and are relatively shallow. They occur predominantly in extreme northwestern areas of the State and are represented by Labu-Sansarc and Pierre-Samsil-Kyle associations.

222 Silty clay loams to silt loams with (a) permeabilities from 1.0 to 2.0 inches per hour, (b) nearly level to strong slopes (maximum slopes 3 to 10 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are widely distributed throughout the State and are represented by the Holdrege and Keith-Alliance-Rosebud associations.

232 Silty clay loams to loams with (a) permeabilities from 1.0 to 2.0 inches per hour, (b) very gentle to moderately steep slopes (maximum slopes 10 to 20 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are widely distributed and significant within the State and are represented by the Holdrege-Coly-Uly and Ulysses-Keith-Colby associations.

242 Silty clay loams to loams with (a) permeabilities from 1.0 to 2.0 inches per hour, (b) gentle to steep slopes (maximum slopes 20 to 30 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are widely distributed within the State and are represented by the Coly-Uly-Holdrege and Monona-Ida associations.

312 Silt loams to fine silty loams with (a) permeabilities from 1.5 to 5.0 inches per hour, (b) nearly level to very gentle slopes (maximum slopes 2 to 5 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are found in many parts of the State on well-drained bottomlands and terraces and differ from those in group 212 because of slightly higher permeabilities and lower topographic position. The Haverson-Tripp-Glenberg and Hobbs-Hord-Cozad are representative associations.

322 Silt loams to fine sandy loams with (a) permeabilities from 2.0 to 5.0 inches per hour, (b) nearly level to strong slopes (maximum slopes 3 to 10 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are common in transitional areas between the sandhills and silty uplands and are represented by the Moody-Bazile-Trent and Jayem-Haxton-Rosebud associations.

332 Silt loams to fine sandy loams with (a) permeabilities from 2.0 to 5.0 inches per hour, (b) nearly level to moderately steep slopes (maximum slopes 10 to 20 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are common in transitional areas between the sandhills and silty uplands and are represented by the Kenesaw-Hersh and Oglala-Jayem associations.

352 Silt loams to sandstone with (a) permeabilities from 1.5 to 5.0 inches per hour, (b) gentle to very steep slopes (maximum slopes that exceed 30 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are principally found in the Panhandle and southwest parts of the State in highly eroded uplands. They exhibit very shallow soil development on a sandstone surface and are represented by the Canyon-Bridget-rock outcrop and Canyon-Rosebud-rock outcrop associations.

411 Loams to fine sands with (a) permeabilities from 5.0 to 10.0 inches per hour, (b) nearly level to very gentle slopes (maximum slopes 1 to 3 percent), and (c) depths to seasonal high water table less than 6 feet. These soils are along flood plains and are represented by the Las-Las Animas-McCook and Lawet-Elsmere-Gannet associations.

412 Fine sandy loams to fine sands with (a) permeabilities from 5.0 to 10.0 inches per hour, (b) nearly level to very gentle slopes (maximum slopes 1 to 3 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are on flood plains, differing from the 411 soils only in the depths to water table, and are represented by the Cass-Inavale and Glenberg-Bankard-Yockey associations.

422 Fine sandy loams to fine sands with (a) permeabilities from 5.0 to 10.0 inches per hour, (b) nearly level to strong slopes (maximum slopes 3 to 10 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils occur on uplands, terraces, and footslopes in transitional areas between sandy and silty soils and are represented by the Bazile-Paka-Thurman and Jayem-Sarben-Valent associations.

452 Fine sandy loams to fine sands with (a) permeabilities from 5.0 to 10.0 inches per hour, (b) gentle to very steep slopes (maximum slopes exceeding 30 percent), and (c) depths to seasonal high water table exceeding 6 feet. These are principally shallow residual soils formed in sandstone on highly eroded uplands in the northern Panhandle of the State and are represented by the Busher-Sarben-Tassel and Tassel-Busher associations.

511 Fine sandy loams to fine sands with (a) permeabilities exceeding 10.0 inches per hour, (b) nearly level to very gentle slopes (maximum slopes 1 to 3 percent), and (c) shallow water tables with depths to seasonal high water table less than 6 feet. These soils are on flood plains and in Sand Hills valleys and are represented by the Gothenburg-Platte and Loup-Elsmere-Dunday associations.

522 Loams to sands and gravels with (a) permeabilities exceeding 10.0 inches per hour, (b) nearly level to strong slopes (maximum slopes 3 to 10 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils occur in the uplands and are represented by the Jansen-O'Neill and O'Neill-Dunday-Meadin associations.

541 Loamy fine sands to fine sands with (a) permeabilities exceeding 10.0 inches per hour, (b) nearly level to very steep slopes (maximum slopes 20 to 30 percent), and (c) substantial areas having depths to seasonal high water table less than 6 feet. This hydrologic soil group is rather unique in that steeply sloping dunes alternate with submerged valleys with shallow water tables and seasonal ponding. The Valentine-Els and Valentine-Elsmere-Gannett associations represent these soils.

542 Loamy fine sands to fine sands with (a) permeabilities exceeding 10.0 inches per hour, (b) nearly level to very steep slopes (maximum slopes 20 to 30 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are principally found in the Sand Hills uplands and are represented by the Valentine-Tassel and Valentine-Simeon associations.

552 Loamy fine sands to fine sands with (a) permeabilities exceeding 10.0 inches per hour, (b) gentle to very steep slopes (maximum slopes exceeding 30 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are the most prevalent upland soils of the Sand Hills and are represented by the Valentine and Valentine, hilly and rolling associations.

HYDROLOGIC CHARACTERISTICS OF THE SOIL GROUPS

Soil group	Average permeability of 60-inch soil profile (inches per hour)	Average permeability of least permeable horizon (inches per hour)	Average available water capacity (inches per inch)	Average maximum soil slope (percent)	Depth to seasonal high water table (feet)
111	0.80	0.44	.16	2	<6
122	.31	.17	.14	8	>6
142	.67	.54	.15	25	>6
152	.56	.46	.12	33	>6
222	1.23	1.09	.20	5	>6
232	1.28	1.21	.19	15	>6
242	1.37	1.31	.20	23	>6
312	1.73	1.36	.18	3	>6
322	2.91	2.02	.16	3	>6
332	3.29	2.93	.18	12	>6
352	1.85	1.17	.18	44	>6
411	8.42	1.52	.13	2	<6
412	7.52	3.05	.12	2	>6
422	6.85	4.15	.13	8	>6
452	7.54	4.00	.15	36	>6
511	12.90	3.99	.09	3	<6
522	12.37	3.32	.10	6	>6
541	12.67	11.38	.08	27	<6
542	12.20	7.57	.08	27	>6
552	12.38	10.67	.07	50	>6